

REMARKS

Status of the claims:

With the above amendment, claims 1 and 10 have been amended and claim 14 has been added. Claim 14 has support from original claims 6, 9, and 10. Claims 1-3 and 5-14 are pending and ready for further action on the merits. No new matter has been added by way of the above amendment. Support for the amendment to claim 1 can be found at page 8, lines 2-11, page 9, lines 1-9 of the written description. Reconsideration is respectfully requested in light of the following remarks.

Rejections under 35 USC §§102/103

Claims 1, 2, 12 and 13 are rejected under 35 USC §103(a) as being unpatentable over JP '175 (JP 59-150175 A) or Kato '003 (US Patent No. 5,349,003) in view of Pacifici '328 (US Patent No. 5,843,328).

Claim 5 is rejected under 35 USC §103(a) as being unpatentable over JP '175 in view of Pacifici '328 and further in view of Kubo '175 (US Patent No. 5,883,175).

Claims 1, 2, 10, 12 and 13 are rejected under 35 USC §103(a) as being unpatentable over Amimoto '991 (US Patent No. 5,143,991) in view of Kato '003 and Pacifici '328.

These rejections are traversed for the following reasons.

**Present Invention**

The present invention relates to a carpet comprising a stainproof-treated textile, wherein the carpet has a stainproof ratio of at least 30 % wherein the a stainproof ratio is defined as follows:

Stainproof ratio (%) =  $100 \times (\Delta E_N - \Delta E_{Tn}) / E_N$  where

$\Delta E_N$  is the color difference after stainproof test of untreated carpet;

$\Delta E_{Tn}$  is the color difference after stainproof test of carpet treated by the stainproof agent; and

n is the number of cleanings. In the instant invention, cleaning is conducted according to AATCC-138. and  $n \leq 20$ . The carpet of the present invention also comprises a stainproofing agent composition, which consists essentially of

- (1) a fluorine-containing stainproofing agent consisting essentially of a fluoroalkyl-containing compound; and
- (2) a triazine ring-containing crosslinking agent; and
- (3) at least one of a catalyst, an additive and a crosslinking agent other than the triazine ring-containing crosslinking agent.

Consisting Essentially of

The Examiner's attention is drawn to the amendment in the present claims in the transitional language from "comprising" to "consisting essentially of". "Consisting essentially of" imparts a claim scope that excludes components that materially affect the basic and novel characteristics of the composition. See MPEP §2111.03.

Disclosure of JP '175

JP '175 discloses a urea or urethane compound with at least two ethylene imine groups that are essential. The fiber made in JP '175 includes yarns, woven, knitted and non-woven fabrics, which are used for ski pants, a windbreaker, golf wear, etc. Further, JP '175 discloses in lines 8-10 of the upper column of page 3 that triazine ring-containing compounds have an effect of improving a stitch staggering-resistance. It further says that this stitch is required as a product characteristic. JP '175 discloses a specific urea compound that is not required in the instant invention. JP '175 reports that this specific urea compound (along with a triazine compound) are required to improve durability. The present independent claim 1 excludes this urea compound.

JP. '175 does not disclose that the fiber of JP '175 is applicable to a carpet. JP '175 also fails to disclose the stainproofing agent composition of the present invention.

**Disclosure of Kato '003**

Kato '033 discloses an aqueous fluorine-containing polymer dispersion having particle diameters of 0.05-3  $\mu\text{m}$ . These fluorine-containing polymer dispersions are obtainable by emulsion-polymerizing 5-95 parts by weight of a monomer mixture. The monomer mixture consists of at least one monomer selected from the group consisting of alkyl acrylates whose alkyl groups have 1-18 carbon atoms and alkyl methacrylates whose alkyl groups have 1-18 carbon atoms and optionally an ethylenically unsaturated compound copolymerizable with the alkyl acrylates and the alkyl methacrylates. These compounds are present in an aqueous medium in the presence of 100 parts by weight of particles of a vinylidene fluoride polymer and an aqueous dispersion containing a fluorine-containing polymer which is present in an amount that is 95-30 parts by weight (in terms of solids content) of said aqueous fluorine-containing polymer dispersion and 5-70 parts by weight (in terms of solids content) of an aqueous dispersion of a water-soluble resin and/or a water-dispersible resin. These aqueous dispersions can be used

as a coating composition for fiber-treating compounds, a paper-processing compound, or a floor-coating compound.

Kato '003 discloses a monomer mixture that is not required in the instant invention. Kato '003 reports that this monomer mixture is required for stain removability. The present independent claim 1 excludes this monomer mixture.

#### **Disclosure of Pacifici '328**

Pacifici '328 discloses a protective finishing composition as well as methods of manufacturing such compositions for finishing carpet products. The composition in Pacifici '328 has a stainblocker and fluorocarbon-based repellant which can be made in a one-step process. This process includes first adding a naphthalene sulfonated salt to either a stainblocker or a fluorocarbon-based repellant and then adding the combination to the chemical not originally mixed with the naphthalene sulfonated salt.

Pacifici '328 does not disclose the stainproofing agent composition of the present invention.

#### **Disclosure of Kubo '175**

Kubo '175 discloses a stainproofing composition having water and oil-repellency, containing a polymer emulsion prepared by dissolving at least one polyfluoroalkyl group-containing

compound selected from the group consisting of a polyfluoroalkyl group-containing (meth)acrylate polymer, a polyfluoroalkyl group-containing polyester, a polyfluoroalkyl group-containing maleate and a polyfluoroalkyl group-containing fumarate in at least one monomer selected from the group consisting of a (meth)acrylate ester, a vinyl ester, a styrene compound and vinylidene chloride, vinyl chloride. Then, the resultant solution is emulsified in water to prepare an oil-in-water emulsion, then polymerized. The resulting emulsion exhibits water- and oil-repellency and stainproof properties.

Kubo '175 fails to disclose the stainproofing agent composition of the present invention.

#### Disclosure of Amimoto '991

Amimoto '991 discloses a copolymer comprising (a) an acrylate or methacrylate having a fluoroalkyl group, (b) a polyalkylene glycol acrylate or methacrylate, (c) an acrylate or methacrylate having a hydroxyl group, and (d) at least one compound selected from the group consisting of alkyl acrylates, alkyl methacrylates and butadiene. The resulting copolymer imparts water and oil repellency and soil-releasability to fabrics.

Amimoto '991 discloses a four-part mixture that is not required in the instant invention. Amimoto '991 reports that

this four-part mixture is necessary. The present independent claim 1 excludes this four-part mixture. Thus, Amimoto '991 fails to disclose the stainproofing agent composition of the present invention.

Removal of the Rejection over JP '175 or Kato '003 in view of  
Pacifici '328

The Examiner asserts that JP '175 discloses using a triazine ring containing compound that improves the durability of the water and oil repellant compositions, in the first paragraph of page 3 of the English translation of JP '175. However, Applicants point out that the first paragraph of page 3 of the English translation of JP '175 discloses that a combined composition composed of a specific urea compound and a compound containing a triazine ring has improved durability.

The specific urea compound (i.e., a urea group or urethane group compound containing two or more ethyleneimino groups) and the triazine-containing compound are both required to improve the durability.

In contrast, the stainproofing agent composition of the claimed present invention does not contain this specific urea compound.

The Examiner mentioned that the Applicant has not claimed the monomer mixture, which is essential in the aqueous fluorine-

containing polymer dispersion of Kato '003, cannot be present in the stain-resistant composition. Claim 1 has been amended to recite the transitional language "consisting essentially of" which excludes the monomer mixture described by Kato '003. This monomer mixture does have an effect on the composition. Accordingly, one of ordinary skill in the art would not arrive at the instant invention from the disclosures of JP '175 or Kato '003 in view of Pacifici '328. Withdrawal of the rejection is warranted and respectfully requested.

**Removal of the Rejection over JP '175 in view of Pacifici '328 and further in view of Kubo '175**

As pointed out above, the Examiner asserts that JP '175 discloses using a triazine ring containing compound that improves the durability of the water and oil repellant compositions, in the first paragraph of page 3 of the English translation of JP '175. Applicants again point out that the first paragraph of page 3 of the English translation of JP '175 discloses that a combined composition composed of a specific urea compound and a compound containing a triazine ring has improved durability.

The specific urea compound (i.e., a urea group or urethane group compound containing two or more ethyleneimino groups) and the triazine-containing compound are both required to improve the durability.



In contrast, the stainproofing agent composition of the present invention does not contain this specific urea compound.

Claim 1 has been amended to recite the transitional language "consisting essentially of" which excludes compounds that affect the mixture. Thus, one of ordinary skill in the art would not arrive at the instant invention from the disclosures of JP '175 in view of Pacifici '328 and further in view of Kubo '175. Withdrawal of the rejection is warranted and respectfully requested.

**Removal of the Rejection over Amimoto '991 in view of Kato '003 and Pacifici '328**

The copolymer present in Amimoto '991 comprises: (a) an acrylate or methacrylate ester having a fluoroalkyl group, (b) a polyalkylene glycol acrylate or methacrylate, (c) an acrylate or methacrylate ester having a hydroxyl group, and (d) at least one compound selected from the group consisting of an alkyl acrylate, an alkyl methacrylate, and butadiene.

Instantly amended claim 1 excludes the elements (b), (c) and (d) above. Applicants assert that there is no motivation to omit these items and then add the remaining item to the triazine compound disclosed in Kato '003 and apply it to a carpet as disclosed in Pacifici '328. Accordingly, withdrawal of the rejection is warranted and respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

If any questions remain regarding the above matters, please contact Applicant's representative, T. Benjamin Schroeder (Reg. No. 50,990), in the Washington metropolitan area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims have been amended as follows:

1. (Three times Amended) A carpet comprising a stainproof-treated textile, wherein the carpet has a stainproof ratio defined below of at least 30 %:

Stainproof ratio (%) =  $100 \times (\Delta E_N - \Delta E_{Tn}) / E_N$ , wherein

$\Delta E_N$ [: Color] is the color difference after a stainproof test of untreated carpet;

$\Delta E_N$ [: Color] is the color difference after a stainproof test of carpet treated by the stainproof agent; and

$n$ [:] is the number of [cleaning; cleaning is] cleanings conducted according to AATCC-138[, ] and  $n \leq 20$ ;

wherein the carpet is treated with a stainproofing agent composition: for carpet [comprising] consisting essentially of:

- (1) a fluorine-containing stainproofing agent [comprising] consisting essentially of a fluoroalkyl-containing compound; and
- (2) a triazine ring-containing crosslinking agent; and
- (3) at least one of a catalyst and an additive,

wherein the catalyst is selected from the group consisting of organic carboxylic acids; organic carboxylates between the organic carboxylic acids and ammonium, sodium, or potassium; inorganic acids; inorganic acid salts between the inorganic

acids and ammonium, sodium, potassium, magnesium, zinc, aluminum, or iron; and

wherein the additive is selected from the group consisting of insect repellents, flame retardants, antistatic agents, dye fixing agents, wrinkle inhibitors, softeners and stain block agents which inhibit adhesion of acid dye.

10. (Twice Amended) [The] A carpet treated with [the] a stainproofing agent composition, [which comprising] consisting essentially of:

(2) a fluorine-containing stainproofing agent [comprising] consisting essentially of a fluoroalkyl-containing compound and

(2) a triazine ring-containing crosslinking agent [and may further comprise at least one selected from the group consisting of PEG and a copolymer comprising:

(3) at least one monomer selected from the group consisting of acrylate and methacrylate which have a polyoxyethylene chain and

(4) at least one reactive monomer selected from the group consisting of glycerol methacrylate and glycidyl methacrylate].

Claim 14 is added.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims have been amended as follows:

Claim 1. (Twice Amended) A carpet comprising a stainproof-treated textile, wherein the carpet has stainproof ratio defined below of at least 30 %:

$$\text{Stainproof ratio (\%)} = 100 \times (\Delta E_N - \Delta E_{Tn}) / E_N$$

$\Delta E_N$ : Color difference after stainproof test of untreated carpet;

$\Delta E_{Tn}$ : Color difference after stainproof test of carpet treated by the stainproof agent;

n: the number of cleaning; cleaning is conducted according to AATCC-138,  $n \leq 20$

wherein the carpet is treated with a stainproofing agent composition for carpet comprising:

(1) a fluorine-containing stainproofing agent comprising a fluoroalkyl-containing compound; and

(2) a triazine ring-containing crosslinking agent.

Claim 5. (Amended) The carpet according to claim 1 [4] wherein the fluorine-containing stainproofing agent comprising a fluoroalkyl-containing compound comprises at least one selected from the group consisting of fluoroalkyl-containing maleic acid

diester copolymer, ' fluoroalkyl-containing adipic acid diester compound and fluoroalkyl-containing urethane compound.